

## ABSTRACT OF THE DISCLOSURE

An isolated nucleic acid molecule comprising a polymorphic site selected from the group consisting of positions 164, 269, 284, 407 and 989 of SEQ ID NO: 1, an array or a kit comprising the same. Also provided are a method for detecting single nucleotide polymorphism (SNP) in bovine proteinase inhibitor (PI) gene, a method for haplotyping a bovine cell, a method for progeny testing of cattle based on said haplotyping, a method for selectively breeding of cattle based on haplotyping a parent animal. The present invention further provides a method for testing a dairy cattle for its milk production trait, comprising haplotyping its cells, wherein a cattle having haplotypes 1, 3, 4 or 5 indicates that the cattle has desirable milk production trait. Haplotype 1 indicates that the cattle has the most desirable milk production trait.